

CLAIMS

What is claimed is:

1. A method for producing an aluminide coating on a hollow article, comprising the steps of:

furnishing an article having a hollow interior and an access opening to the hollow interior;

placing an aluminide coating tape into the hollow interior through the access opening; and

vapor phase aluminiding the hollow article using an external aluminum vapor source separate from the aluminide coating tape.

2. The method of claim 1, wherein the step of furnishing includes the step of furnishing the article that has previously been in service.

3. The method of claim 1, wherein the step of furnishing includes the step of furnishing the article comprising a nickel-base alloy.

4. The method of claim 1, wherein the step of furnishing includes the step of furnishing the article comprising a nickel-base superalloy.

5. The method of claim 1, wherein the step of furnishing includes the step of furnishing the article comprising a cobalt-base superalloy.

6. The method of claim 1, wherein the step of furnishing includes the step of furnishing the article having an airfoil section having at least a portion of the airfoil hollow.

7. The method of claim 1, wherein the step of furnishing includes the step of

furnishing the article as a gas turbine blade having the hollow interior extending from a blade tip into a portion of the airfoil section.

8. The method of claim 1, wherein the step of placing includes the step of providing the aluminide coating tape comprising an aluminum-containing alloy powder and a binder.

9. The method of claim 1, wherein the step of vapor phase aluminiding includes the step of

heating the hollow article having the aluminide coating tape in the hollow interior to a temperature of at least about 1875°F in an atmosphere comprising aluminum vapor.

10. The method of claim 1, wherein the step of vapor phase aluminiding includes the step of

heating the hollow article having the aluminide coating tape in the hollow interior to a temperature of about 1975°F +/- 25°F, in an atmosphere comprising aluminum vapor.

11. The method of claim 1, wherein the step of vapor phase aluminiding includes the steps of:

placing the hollow article having the aluminide coating tape in the hollow interior into an interior of an aluminiding container,

placing an aluminum-containing alloy in communication with the interior of the aluminiding container, and

heating the hollow article having the aluminide coating tape in the hollow interior and the aluminum-containing alloy to a temperature of at least about 1875°F.

12. A method for producing an aluminide coating on a hollow article, comprising the steps of:

furnishing an airfoil made of a nickel-base superalloy and having at least a portion of the airfoil hollow, wherein the airfoil has previously been in service;

placing an aluminide coating tape into the hollow interior through the access opening; and

vapor phase aluminiding the hollow article using an external aluminum vapor source separate from the aluminide coating tape, wherein the step of vapor phase aluminiding includes heating the airfoil to a temperature of at least about 1875°F in an atmosphere comprising aluminum vapor.

13. The method of claim 12, wherein the step of placing includes the step of providing the aluminide coating tape comprising an aluminum-containing alloy powder and a binder.